

## Patent claims

1. A method for preparing water-insoluble  $\alpha$ -1,4-glucans in which sucrose is converted  
5 in vitro to water-insoluble  $\alpha$ -1,4-glucans and fructose by an enzyme having the enzymatic activity of an amylosucrase, which comprises carrying out the reaction in an aqueous, buffer-free system.
- 10 2. The method as claimed in claim 1, wherein the amylosucrase is an enzyme from a prokaryotic organism.
- 15 3. The method as claimed in claim 2, wherein the prokaryotic organism belongs to the genus *Neisseria*.
- 20 4. The method as claimed in claim 3, wherein the prokaryotic organism is *Neisseria polysaccharea*.
- 25 5. The method as claimed in one of claims 1 to 4, wherein the amylosucrase is produced as a recombinant.
- 30 6. The method as claimed in one of claims 1 to 5, wherein a purified amylosucrase is used.
7. The method as claimed in one of claims 1 to 6, wherein the amylosucrase is bound to a support material.
- 35 8. The method as claimed in one of claims 1 to 7, wherein an external carbohydrate acceptor is added.